

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Initially, claims 7-9, 15 and 16 have been withdrawn from consideration by the Examiner for being directed to a non-elected invention. Claims 17-19 have been added to the application through the present amendment, and are considered allowable over the art as they recite features not taught by the cited references. Thus, claims 1-4, 11, 12, 14, and 17-19 are presented for consideration.

Claim 12 and 14 were indicated as containing allowable subject matter, and would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 12 has been amended into independent form so as to include claim features from the base claims. As amended, claim 12 is in a condition indicated by the Examiner as allowable. Claim 14, as well as new claims 17 and 18, depend from claim 12. Accordingly, claims 12, 14, 17, and 18 are considered to be allowable. New claim 19 is similar to allowed claim 12, and is likewise considered to be allowable over the art of record. Favorable consideration of new claim 19 is requested.

Claims 1-3 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over de Lange (U.S. Pat. 4,488,739) in view of Kunz et al. (U.S. Pat. 4,952,218). The rejections are traversed for the following reasons.

The invention defined in claim 1 relates to a frame joint structure for a vehicle.

The frame joint structure is comprised of a first frame member being U-shaped in cross section and having a first sidewall, a second sidewall, and a bottom wall and defining an opening, a second frame member, similar to the first frame member, and being U-shaped in cross section and defining an opening, the second frame member having an end portion connected to at least one of the first and second sidewalls of the first frame member, a reinforcing member, with a first reinforcing member extending in the first frame member, and with a second reinforcing member extending from the second frame member and terminating at a joint with the first reinforcing member in the first frame. The vehicle frame joint structure further includes a plate member closing the openings of the first and second frame members so as to form a frame joint structure with closed cross sections, and a foamed resin filling spaces defined by the plate member, the first and second frame members, and the reinforcing member. The foamed resin, which results from foaming an unfoamed resin applied uniformly onto at least upper and lower surfaces of the reinforcing member, spaces the reinforcing member from the plate member and the first and second frame members. Further, as amended in Amendment C, the reinforcing member has a finite length, defined as "free ends".

de Lange is cited for teaching an insulating pipe part for a branch pipe. Two pipe sections (9, 10) connect with one another to form a straight line. A third pipe section (19) intersects the straight line formed by the pipe sections (9, 10) at the connection point, so as to form a T-shaped branch structure of pipes. The pipes are then surrounded by an insulating layer (11) and finally enclosed with outer walls (11a, 7, and 6).

Kunz is directed toward a double-walled pipeline system. In particular, Kunz

teaches two half shells (22, 23) that are concentrically assembled as an outer layer to a pipe (10). After assembly, the two half shells (22, 23) are glued together to surround the pipe (10). This device prevents the escape of fluids if the pipe (10) develops a leak. More particularly, the two half shells define an outer pipe conduit, which serves to retain and transport fluids for later release. Kunz is not related to a vehicle frame structure, and does not teach foamed resin in any way. Further, filling the space between the two half shells and the pipe of Kunz would be contrary to use of the Kunz device as a "double-walled pipeline system" by preventing fluid flow within the two half shells. The Examiner admits that Kunz fails to teach a foamed resin disposed between a reinforcing member, the first and second frame members, and the plate as required by claim 1, and has cited de Lange as providing same.

It is initially noted that the present invention is directed towards a vehicle frame joint structure utilizing a reinforcing member. The reinforcing member of the present invention strengthens the joint where it is disposed. As defined in claim 1, the reinforcing member is only present at the joint locations. This feature of claim 1 is specifically provided by the reinforcing member having "free ends".

The de Lange and Kunz references are directed towards double-walled pipeline systems. The Examiner cites the inner pipe portion of the references as teaching or suggesting the reinforcing member of claim 1. It is respectfully asserted that even if the references were properly combined, the reinforcing member of claim 1 is patentably distinct from the inner pipes of the cited references. As both de Lange and Kunz are concerned with double-walled pipes, it is considered apparent that any such 'reinforcing member' (i.e. inner pipe) taught by de Lange and Kunz would necessarily extend beyond the vicinity of the joint so as to not have a free

end, as required by claim 1. While the inner pipes may serve a reinforcing function, the teachings of the references does not render obvious a reinforcing member having free ends adjacent to the joint. For this reason, even if the references are combined as proposed by the Examiner, claim 1 is not rendered obvious by the combined teachings.

With reference to the de Lange patent, and contrary to the Examiner's assertions, the lower half portion of the pipe (7) does not teach the first frame member as defined in claim 1. Specifically, the first frame member of claim 1 is U-shaped in cross-section. The pipe (7) of de Lange is circular in cross-section and does not have first and second sidewalls and a bottom wall that cooperate to define an opening. Rather, the pipe (7) appears to be circular with a beveled or angled open end that envelops the mating pipe (6). Similarly, the lower half portion of the pipe (11a) does not provide the structural features of the claimed second frame member. The de Lange pipe (11a) also has a circular, rather than U-shaped, cross-section. Additionally, the pipe (11a) does not have an end portion which is attached to a sidewall of the first frame member (pipe 7) to define a joint. Finally, de Lange does not teach a "plate member closing the openings of the first and second frame members so as to form closed cross sections of the vehicle frame joint structure", as required. The Examiner's citation to the upper portions of the pipes (7, 11a) as serving as the "plate member" is in error. Clearly, the upper portions of a pair of unitary pipes cannot be equated to a single member (e.g., plate member) that covers a pair of openings, where the openings are formed by separate structural elements, as defined in claim 1. Therefore, it is respectfully submitted that de Lange does not teach that for which it is cited.

Still further, de Lange does not teach or suggest the foamed resin defined in claim 1. The foamed resin of claim 1 fills the space defined by the plate member, the frame members, and the reinforcing member. As de Lange does not teach the plate member, the frame members, or the reinforcing member of claim 1, de Lange cannot teach the foamed resin filling the space defined by these elements.

Moreover, the inner pipe (9) of de Lange is fixed in position relative to the outer sleeves (7). Thus, the foamed resin does not space the inner pipe from the outer sleeve. Claim 1 requires the reinforcing member be spaced from the frame members by the foamed resin.

Thus, the references do not teach or suggest all the features of claim 1, and therefore do not establish a *prima facie* case of obviousness. For this reason alone, the rejection to claim 1 should be withdrawn.

Finally, it is respectfully submitted that one skilled in the art would not be motivated to combine de Lange and Kunz in the manner required to arrive at the present invention. Insulation of the pipe, which is taught by de Lange, is at odds with the purpose of Kunz. Kunz teaches a double walled pipeline system, which addresses the problem of a joint structure in a double walled pipeline system, such as accommodation of fittings and valves. de Lange is directed toward solving a problem with an insulated pipeline system. In Kunz, it is important and necessary for fluid to flow not only within the inner pipe, but also outside of the inner pipe, with such outer flow being contained by an outer pipe conduit. The foamed insulation of de Lange would not be able to convey fluids. As such, the references teach against their combination. A person skilled in the art would not find it obvious to look to the teachings of Kunz to resolve the deficiencies of de Lange. Further, keeping in mind

that the present invention is a frame joint structure for an automobile, which is decidedly different than a pipeline system, it is further noted that there is no suggestion or motivation to combine the insulated pipe of de Lange with the double-walled pipeline of Kunz to provide an automobile frame joint.

Therefore, it is respectfully submitted that there is no motivation or suggestion in the art of record that would lead one skilled in the art to combine the references in the manner proposed by the Examiner. Accordingly, claim 1, and claims 2, 3, and 11 that depend therefrom, are considered to be allowable over the art of record, and notice to that effect is hereby requested..

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over de Lange as applied to claims 1-3 and 11, and further in view of Heilemann (U.S. Pat. 3,948,247). The rejection is traversed for the following reasons.

It is respectfully submitted that Heilemann does not correct the deficiencies of the de Lange and Kunz references as they relate to claim 1. For this reason alone, claim 4 is allowable over this proposed combination of references.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-14986.

Respectfully submitted,

RANKIN, HILL, PORTER & CLARK LLP

By /Samir S. Khoury/
Samir S.Khoury, Reg. No. 60174

4080 Erie Street
Willoughby, Ohio 44094-7836
(216) 566-9700